

USSR

UDC 669.15.018.44

BOGACHEV, I. N., MALINOV, L. S., EYSMONDT, T. D.

"Role of Martensitic Conversion During Deformation in Work Hardening Unstable Austenitic Steels"

Povыш. konstruktivn. prochnosti stalev i splavov. No 1 -- V sb. (Improving the Structural Strength of Steels and Alloys. No 1 -- collection of works), Moscow, 1970, pp 126-129 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 41653

Translation: During deformation of unstable austenitic steel, martensitic conversion which hardens the steel still further takes place. The effect of plastic flow at various temperatures on the mechanical properties of OKh13AC8 and 30Kh10G10 steels was investigated. The expediency of using a number of successive deformations with intermediate heating to improve the properties of the steel was demonstrated.

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TITLE--THE CYTOCHEMISTRY OF HERPETIC INFECTION OF FIBROBLAST CULTURE OF HUMAN EMBRYO -U UNCLASSIFIED PROCESSING DATE--13NOV70
AUTHOR-(03)-SIKBULATOV, R.M., MALINOVSKAYA, Y.V., VANAG, K.A.

COUNTRY OF INFO--USSR

SOURCE--BYULETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,
NR 6, PP 110-113
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EMBRYOLOGY, HUMAN PHYSIOLOGY, FETUS, DNA, RNA, HERPETIC VIRUS,
GLYCOGEN, CELL PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0574

CIRC ACCESSION NO--AP0131197

UNCLASSIFIED

STEP NO--UR70219/707049/006/0110/0113

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131197

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CYTOCHEMICAL STUDY OF HERPETIC INFECTION OF A CELLULAR CULTURE OF HUMAN EMBRYO FIBROBLASTS HAS SHOWN AN INTENSIFIED DNA ACTIVITY IN THE NUCLEI OF INFECTED CELLS, AN INCREASED QUANTITY OF RNA IN THE NUCLEI AT EARLY STAGES OF THE INFECTION AND A DECREASED RNA ACTIVITY IN THE CYTOPLASM IN THE RESIDUAL PHASE. THE INFECTION WAS ACCCOMPANIED BY A REDUCED QUANTITY OF GLYCOCEN IN THE CYTOPLASM OF CELLS AND THEIR PROGRESSIVE FATTY INFILTRATION.

FACILITY: D. I. IVANOVSKY INSTITUTE OF VIRIOLOGY OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

USSR

UDC: 51:801

ARAPOV, M. V., KARAPET'YANTS, A. M., MALINOVSKAYA, Z. M., PRORST, M. A.

"Some Problems in Deciphering K'itan Writing"

V sb. Issled. po mat. lingvist., mat. logike i inform. yazykam (Research on Mathematical Linguistics, Mathematical Logic and Information Languages-- collection of works), Moscow, "Nauka", 1972, pp 79-95 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V626)

Translation: Some of the work on studying K'itan texts is presented -- specifically, finding and classifying morphemes of K'itan word forms. K'itan texts in digital transcription served as the initial material.

The described work was made up of three main stages:

1. Division of blocks into fixed (the stem and possibly some word-forming suffixes) and variable (affixes) parts, establishing identities between a number of symbols, finding stable symbol combinations, and classification of post-fixal morphemes on the basis of their co-occurrence range.
2. Carrying out a formal procedure for dividing the variable parts into classes based on the division of blocks into variable and fixed parts, using the material of the first stage.

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ARAPOV, M. V. et al., Issled. po mat. lingvist., mat. logike i inform.
yazykam, Moscow, "Nauka", 1972, pp 79-95

3. Classification of the variable and fixed parts of blocks in accordance with membership in a nominal or verbal paradigm on the basis of materials of the first stage, utilization of "parallel" passages in the texts, and by comparison with the Mongolian language. In this stage another division of blocks is used (based on the first, but differently constructed). Nearly all stages of the work, particularly the first, were characterized by iterative processes: new governing principles were used to refine those previously found. From the introduction.

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POLAND

SLEDZINSKI, Bohdan, CIESLAKOWA, Ludwika, MALINOWSKI, Romuald;
Institute of Organic Industry, Warsaw

"The Synthesis of New N,N,N',N'-Tetraalkyldiamides
of O-1-Chlorophenyl-2-Chlorovinylphosphoric Acids"

Warsaw, Roczniki Chemii, Vol 47, No 3, 1973, pp 637-640

Abstract: In previous papers the authors have described the synthesis of new N,N-dialkylamides of O-1-chlorophenyl-2,2-dichlorovinylphosphoric acids (1) and N,N-dialkylamides of O-1-chlorophenoxy-2,2-dichlorovinylphosphoric acids (2). The alkoxy group in compounds 1 and 2 was replaced by an amide group. Positive results were obtained only in the case of the derivatives of compound 1, and 20 N,N,N',N'-tetraalkyldiamides of O-1-chlorophenyl-2-chlorovinylphosphoric acids were obtained in Perkow's reaction, which have not yet been described in the literature. The raw materials used were N,N,N',N'-tetraalkylamides of O-alkylphosphorous acids and chlorides of chlorophenacylidene or chlorophenacylidines. The methods of preparation and the physical characteristics of the obtained compounds are given.

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USSR

UDC 621.3.064.1:621.315.1.3.027.5

DENISENKO, G. I. MALINOVSKIY, A. A.

"Application of Cutouts in Ripple Voltage Circuits"

Vestn. L'vov. politekhn. in-ta (News of the L'vov Polytechnical Institute),
1970, No 46, pp 27-37 (from RZh-Elekrotekhnika i Energetika, No 3, Mar 71,
Abstract No 3Yel09)

Translation: The possibility of using cutouts installed in 6-10 kv AC net-works for protection from single-phase short circuits in a ripple current circuit with a variable voltage component up to 10 kv is investigated and evaluated. The limiting transformer power for which such protection is possible both with short circuiting across the transformer clamps and at any point of the winding is determined. A procedure is proposed for calculating the phase distribution of the current of the electric power transmission line and the transformer in the case of a single-phase short circuit considering the effect of the current regulator of the converter for a circuit of any complexity. There are 4 illustrations and a 10-entry bibliography.

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USSR

UDC: None

MALINOVSKIY, B. N., PALAGIN, A. V., and KURGAYEV, A. F.

"Digital-Analog Computer Controlling Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 26, 1973, p 169, 386409

Translation: A device containing a passive memory unit connected with a counter-register of arguments, a coincidence circuit, an operational memory unit, and an adder whose output is connected to the inputs of the operational memory unit and the counter-register and whose inputs are connected through an analog-digital converter to an input signal switch and to the outputs of the passive and operational memories is distinguished in that, for the purpose of reducing the required passive memory volume, it contains a counter-register for increments of the arguments, whose inputs are connected with the outputs of the adder and the operational memory unit while the outputs are connected through the coincidence circuit to the controlling input of the analog-digital converter; the output of the adder is connected through the digital-analog converter to one of the inputs of the input signal switch and also through a nonlinear approximation input element in each quantizing section with a capacitor, for example, whose second plate is grounded.

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USSR

MALINOVSKIY, B. N., PALAGIN, A. V. and IVANOV, V. A.

"Microprogram Control"

Upravlyayushchiye Sistemy i Mashiny [Control Systems and Machines], 1973,
No 1, pp 59-65 (Translated from Referativnyy Zhurnal Kibernetika, No 9,
1973, Abstract No 9V640).

Translation: The primary aspects of the theory and practice of micro-programming are studied, a classification is presented of the control devices using the principles of microprogramming, and an approach is suggested to their synthesis. The materials of the article are based on analysis of a number of foreign and domestic sources, and also the results of studies performed by the authors of the article.

Authors' view

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USSR

UDC: None

MALINOVSKIY, B. N., SIVACHENKO, P. M., GULYAYEV, V. A., PALAGIN,
A. V., and YAKOVLEV, Yu. S.

"Digital Computing Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovar-
nyye znaki, No 9, 1973, p 164, No 368605

Abstract: To improve the reliability of the digital device de-
scribed in this patent, it is supplied with two logic circuit
units each consisting of two logic cells for summation, modulo two and two
logic OR cells. The switching cores of the cells direct the signal to record-
ing and memory addresses. Other circuits in the assembly are described in
some detail.

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USSR

UDC: 681.325.5

MALTNOVSKY, B. N., BOYUN, V. P., Institute of Cybernetics, Academy of Sciences of the UkrSSR

"A Hybrid Arithmetic Device"

USSR Author's Certificate No 284447, filed 28 Jul 69, published 28 Dec 70
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B382)

Translation: The invention applies to the field of computer technology and can be used for computing algebraic expressions and the values of functions in specialized computers and in hybrid computer systems. Hybrid arithmetic units are known which contain digital-analog converters, a DC amplifier, a comparator, a device for determining polarity, and switches. The conventional arithmetic device has the following disadvantages. The structure of the conventional arithmetic unit is well adapted to computing sums of paired products and series but is inadequately efficient in computing sums of products of an odd number of cofactors, the values of $\sum_{i=1}^k a_i$ (when k exceeds the number of

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USSR

MALINOVSKIY, B. N., BOYUK, V. P., Soviet Patent No 264447

blocks of n sections), and certain other algebraic expressions. The circuitry of the device for computing different algebraic expressions is complex. In the proposed device the output of the first digital-analog converter of each conversion block is connected through a switch to the input of the DC amplifier, and the output of the second digital-analog converter of each block is connected to the input of the first digital-analog converter of the next block. This improves the accuracy of calculations and expands the functional possibilities of the device. One illustration.

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USSR

UDC 681.3

MALINOVSKIY, B. N., SIVACHENKO, P. M., BONDARENKO, I. T.

"Certain Problems in the Planning of a Basic Control Machine"

1-ya Nauchno-tekhn. Konferentsiya Spets. Konstrukt. Byuro Mat. Mashin i Sistem
[First Scientific and Technical Conference of the Special Design Bureau for
Mathematical Machines and Systems -- Collection of Works], Kiev, 1970, pp 108-
119, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract
No 6 V571 by V. Mikheyev).

Translation: Problems of the selection of basic technical parameters for digital control equipment are studied. Two possible approaches are discussed: using one series produced universal control machine and using individual specialized high-reliability digital devices. A method is suggested for determining the necessary number of logic cells for the creation of a processor combining arithmetic and logic operations in the memory device. The authors base themselves on the necessity of producing the maximum possible speed with little increase in equipment volume.

USSR

UDC 681.3

MALINOVSKIY, B. N., GULYAYEV, V. A., SIVACHENKO, E. M.

"Testing Arithmetic Operations in a Modulo 2ⁿ Digital Control Computer"

Kibernet. Tekhnika. Vyp. 6, [Cybernetic Equipment, No. 6--Collection of Works], Kiev, 1970, pp 4-13, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V612).

No Abstract.

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USSR

UDC:62-50.001.5

MALINOVSKIY, B. N., Corresponding Member, Acad. Sci. UkrSSR, YEGIPKO, V. M.,
Candidate of Technical Sciences, and POGOSYAN, I. A.

"Calculation of Certain Information Characteristics in Systems for Automation of Complex Experiments"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No. 5, Sep-Oct 70,
pp. 34-37

Abstract: The information characteristics of automation systems include the parameters describing the functioning of the system and determining its information handling capabilities, including throughput capacity, average speed of information processing devices and input-output devices, average time spent by an individual message in the servicing system, required memory volume (main memory, buffer memory, external storage, etc.), memory volume utilization factor, and average waiting time of an individual message before servicing is begun. The system calculated is designed for automation of collection and processing of data during testing of complex products under series production; the main purpose of this system is to

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USSR

UDC:62-50.001.5

MALINOVSKIY, B. N., YEGIPKO, V. M., POGOSYAN, I. A., Kiev, Mekhanizatsiya i Avtomatzatsiya Upravleniya, No. 5, Sep-Oct 70, pp. 34-37

increase the productivity of labor during the performance of complex experiments, to increase the quality of testing, and to reduce the time required for the production cycle of the products involved. The operation of the system, which includes a Dnepro prime computer and a Minsk-22 backup computer, is described. The information characteristics of the system are calculated.

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USSR

UDC: 681.335.82

~~MALINOVSKIJ, E. N.~~, BOYUM, V. P., Institute of Cybernetics, Academy of Sciences of the Ukrainian SSR

"A Device for Raising to a Power and Extracting a Root"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285362, class 42, filed 28 Jul 69, published 29 Oct 70, p 124

Translation: This Author's Certificate introduces a device for raising to a power and extracting a root. The unit contains series-connected first-stage digital-analog converters, a comparator with its second input connected to the output of a second-stage digital-analog converter, and a digital balancing circuit. As a distinguishing feature of the patent, the functional possibilities of the device are extended by including an operation flip-flop, exponent register, and controlled switches. The output of each first-stage digital-analog converter except the last, and the analog input of each analog-digital converter for this stage except the first, are connected through switches controlled from the exponent register to the inputs of the following digital-analog converter and the reference voltage source respectively. The digital inputs of the first-stage

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USSR

UDC: 681.335.82

MALINOVSKIY, B. N. et al., Soviet Patent No 285362

digital-analog converters and the digital input of the second-stage digital-analog converter are connected through two pairs of switches controlled from the operations flip-flop to the input and output terminals of the device.

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USSR

UDC 681.327.2

MALINOVSKIY, B. N., Corresponding Member of the Academy of Sciences Ukrainian SSR, and KOROBENIKOV, V. N.

"Graphics Display Device"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 2, Mar-Apr 72, pp 35-37

Abstract: The article describes a graphics display device developed at the Institute of Cybernetics, Academy of Sciences Ukrainian SSR, for the reproduction of two-dimensional curves and three-dimensional surfaces. Linear interpolation and transformation of coordinates are in analog form. The device is intended for use in standard systems for the automation of scientific research. A block diagram is given showing the device connected to a Dnepr general-purpose computer.

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USSR

MALINOVSKIY, L. G., PINSKER, I. Sh., TSUKERMAN, B. M.

"Coding of Electrocardiograms in Automatic Diagnosis Systems"

Opoznavaniye i Opisaniye Liniy [Recognition and Description of Lines -- Collection of Works], Moscow, Nauka Press, 1972, pp 85-95 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V708 by the authors).

Translation: A digital computer is used to compare various methods of coding of electrocardiograms. Based on the results produced, a device was suggested and manufactured for coding of EKG's. 14 Biblio. Refs.

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USSR

UDC 547.398.547.599.547.71

MALINOVSKIV, M. S., KAS'YAN, L. I., OVSYANIK, V. D., Dnepropetrovsk State University imeni 300-letiye vossoyedineniya Ukrayiny s Rossiyey

"Oxidation of Bicyclo $\langle 2,2,1 \rangle$ -5-heptene-exo-2-carboxamides"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 10, Oct 71, pp 2139-2143

Abstract: Some bicyclo $\langle 2,2,1 \rangle$ -5-heptene-exo-2-carboxamides were synthesized from bicyclo $\langle 2,2,1 \rangle$ -5-heptene-exo-2-carboxylic acid via the acid chloride. Oxidation of the resultant bicyclo $\langle 2,2,1 \rangle$ -5-heptene-exo-2-carboxamides with perphthalic acid at the moment of formation from phthalic anhydride and concentrated hydrogen peroxide in the presence of urea gives the corresponding epoxides.

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REF ID: A72 G16 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PHARMACOLOGICAL PROPERTIES OF TWO NEW UNSATURATED AMINE ALCOHOL
DERIVATIVES -U-
AUTHOR-(03)-BATRAK, G.YE., MALINOVSKIY, M.S., KHMEL, M.P.
COUNTRY OF INFO--USSR *M*
SOURCE--FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(2), 202-3
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CYCLIC ALCOHOL, AMINE DERIVATIVE, CARDIOVASCULAR DRUG,
HYPERTENSION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0183 STEP NO--UR/0390/70/033/002/0202/0203
CIRC ACCESSION NO--AP0119179
UNCLASSIFIED

272 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NG--AP0119179

ABSTRACT/EXTRACT--(U) GP-O ABSTRACT.

1, DIMETHYLAMINO, 5, CYCLOPENTENYL PENT, 4, YN, 2, OL HCL (A 51) ADMINISTERED I.V. TO DOGS HAD A TEMPORARY HYPOTENSIVE ACTIVITY STARTING AT 5 MG PER KG AND INDUCED BRADYCARDIA. A 51 DECREASED THE AMPLITUDE OF CONTRACTIONS ISOLATED FROG HEART AND DILATED VESSELS IN ISOLATED RABBIT EAR. THESE PROPERTIES WERE LESS SIGNIFICANT WITH
1, DIMETHYLAMINO, 6, ETHYLOCT, 6, EN, 4, YN, 2, OL HCL (A IV). LD SUB50 LEVELS S.C. IN MICE WERE 0.6 AND 0.86 G PER KG FOR A 5A AND A IV, RESP.
FACILITY: DNEPROPETROVSK, MED. INST., DNEPROPETROVSK, USSR.

UNCLASSIFIED

1/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE—REACTION OF SOME EPOXIDES OF OLEFINS WITH HYDROGEN BROMIDE -U-

AUTHOR—(03)—MALINOVSKIY, M.S., YUDASINA, A.G., KUZENTSOVA, L.N.

COUNTRY OF INFO—USSR

SOURCE—IKR. KHIM. ZH. 1970, 36(2), 183-6

DATE PUBLISHED——70

SUBJECT AREAS—CHEMISTRY

TOPIC TAGS—EPOXIDE, ALKENE, HYDROGEN BROMIDE, PROPYLENE OXIDE, UV LIGHT,
CHROMATOGRAPHY

CCNTRCL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—2000/2017

STEP NO--UR/0073/70/036/002/0183/0186

CIRC ACCESSION NO—AP0125605

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125605
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE REACTION OF HBR WITH
PROPYLENE OXIDE AND 3 SUBSTITUTED PROPYLENE OXIDES, THE MAJOR PRODUCT
WAS A SECONDARY ALC. AND NO APPRECIABLE DIFFERENCE WAS MADE BY THE
PRESENCE OF PEROXIDES, UV LIGHT, OR BOTH. THE FOLLOWING PERCENT OF
SECONDARY ALC. BASED ON VAPOR PHASE CHROMATOG. WERE OBTAINED
(SUBSTIUENTS AND RANGE IN PERCENT FOR THE VARIOUS TYPES OF RUN GIVEN):
H, 75.2-8.4; CL, 97.7-8.95; AND CL SUB3, 97.1-100.
FACILITY:
DNEPRCPetrovsk. Gos. Univ., DNEPROPETROVSK, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MATHEMATICAL PLANNING DURING THE EPOXIDATION OF UNSATURATED
COMPOUNDS USING UREA PEROXIDE TO OBTAIN THE MAXIMUM EPOXY NUMBER --U-
AUTHOR--(05)-MALINOVSKIY, M.S., DUBROV, YU.I., VEDENOV, G.N., KARTSYNEL,
M.B., SKRODSKAYA, T.S.
COUNTRY OF INFO--USSR
SOURCE--LAKOKRASCH. MATER. IKH PRIMEN. 1970, (2), 29-31

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--UREA DERIVATIVE, PEROXIDE, PHTHALIC ANHYDRIDE, ETHANOL,
EPOXIDE, VEGETABLE OIL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605019/B08 STEP NO--UR/0303/70/000/002/0029/0031

CTRC ACCESSION NO--APO140903

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140903
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REGRESSIVE EQUATION THAT OFFERED
A MEANS FOR DETG. THE OPTIMUM EPOXIDN. CONDITONS OF VEGETABLE OILS WAS
DERIVED. OPTIMUM AMTS. OF UREA PEROXIDE, PHTHALIC ANHYDRIDE, AND ETOH
PER DOUBLE BOND WERE 1.273, 1.213, AND 0.347 MOLES RESP.

UNCLASSIFIED

USSR

UDC 577.391:576.35

MALINOVSKIY, O. V., Physico-Technical Institute imeni A. F. Ioffe, USSR
Academy of Sciences

"Recovery of Cells from Sublethal Radiation Injuries Caused by Fractional Irradiation"

Moscow, Izvestiya Akademii Nauk SSSR, No 2, Mar/Apr 71, pp 221-231

Abstract: A review of experimental data and literature information on irradiation damage on the cellular level is presented. The process of cellular recovery after fractional irradiation is analyzed quantitatively. The conclusion is drawn that sublethal injury is the result of a single entry of ionizing radiation into certain intracellular structures. Recovery from sublethal injury follows an exponential curve. The second sublethal irradiation dose causes a lethal outcome if it is delivered while the effect of the first exposure still prevails. On the basis of data concerning the dose-survival ratio and the mean duration of sublethal injuries, one can predict the results of fractional irradiation. It is postulated that this concept of the formation of sublethal and lethal cellular injuries does not contradict the classical concept of double-target chromosome mutation.

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USSR

UDC: 669.715.046.54/55

KUZ'MICHEV, L. V., MALINOVSKIY, R. R.

"Refining of Aluminum Alloys by Blowing Through a Mixture of Gas with Flux"

Moscow, Tsvetnyye Metally, No 8, Aug 73, pp 43-45.

Abstract: When a mixture of natural gas with a powder of a low-melting point salt flux acts on a melt, both hydrogen and oxide inclusions are removed simultaneously. The neutral gas is mixed with a fine salt flux powder (for example, ordinary cryolite-containing flux) and the mixture is blown through the melt being refined in order to suppress oxide film formation. This is achieved by the fact that the powder flux quickly melts and covers each bubble with a liquid salt film, which cleans the surface of the bubble of any oxide particles, adsorbing and dissolving them, preventing direct contact between the metal melt and any water vapor present in the refining gas. The hydrogen from the metal diffuses through the film of liquid flux into the gas bubble significantly more rapidly than when a dense oxide film is present around the bubble as when ordinary inert gas, contaminated with oxygen and water vapor, is blown through the melt.

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MALINOVSKIY, R. R.

UDC 669.716.621.745.55

METHOD OF PRODUCING COMPOSITE ALUMINUM ALLOYS WITH AN EQUIAXIAL STRUCTURE

Article by N. S. Malinovskiy and V. I. Tsvetkovskiy, All-Union Institute of Light Alloys; Ordzhonikidze, Izvestiya Vuzu, Tsvetnaya Metallurgiya, Russian, No. 6, 1971, signed to press 16 June 1971, pp 139-143]

The increase in the need for light heat-resistant materials is forcing investigators to improve the already existing alloys and to develop new composites as well as new methods for casting such alloys. Taking into account that the crystals of aluminumides of refractory metals (Mn, Cr, Fe, Cr, etc.) are distinguished by their high degree of hardness and heat resistance, it is feasible to strengthen the aluminum matrix with such phases. However it is not enough to merely produce an aluminum alloy with an alloyed amount of intermetallics crystals, it is necessary that they be very dispersed and uniformly distributed in the structure.

For the purpose of reducing the size of the crystal structure of such alloys we have developed a method of two-stage crystallization [1]. The essence of the method involves the separation of the crystallization into two stages. The first stage takes place in a special device, immediately in front of the crystallizer, at a high rate of cooling. Cooling of the thin jets or drops of the melt takes place below the temperature of the liquidus with the formation of primary intermetallic crystals. The as-yet insufficiently obtained liquid metallic suspension is fed into the crystallizer, where the second stage of crystallization is accomplished, i.e., the ingot is shaped and finally hardened. The high cooling rate of the alloy at the first stage ensures reduction in size of the crystal structure of the ingot. The devices for chilling the metallic flow in front of the crystallizer were also suggested previously in [2-4].

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1/12/82 72-

MALINOVSKIY, R.

UDC 669.716:621.745.55

EFFECT OF SURFACE-ACTIVE SUBSTANCES ON INTERMETALLIC CRYSTAL GROWTH

Article by R.R. Malinovskiy, V.Z. Livanovskikh, All Union Light Alloy Institute, Moscow, Tsvetnoy Vezhnichnyy, Zvezdnyy, Zvezdnyy, Sovetskaya Metalurgiya, Russian, No. 1, 1972, submitted 2 October 1970, pp. 112-114.

At this time, aluminum alloys with primary intermetallic crystals in the structure are being developed and finding application. The inoculation of intermetallic crystals in such alloys by the addition of surface-active elements is almost an uninvestigated area. There are a few papers touching on this problem [1-3].

From the general theory of inoculation (P. A. Rebinder, et al.), it is known that surface-active elements lower the surface tension of a solution. Strictly speaking, the surface tension at the crystal-melt interface should decrease; however, in view of the absence of such experimental data, we frequently work with the variation of the surface tension at the melt-gas interface [3] and indicate the defined relation between them [4].

Inability data for elements in intermetallic compounds

Element	Stability in the intermetallic phase	Mg	Al	Cr	Mn	Fe	Ti	Co	Ni	Al
Be	yes	-	-	yes	yes	-	-	-	-	-
Yb	no	no	no	no	no	no	no	no	no	no
Sc	-	yes	-	-	no	-	-	-	-	-
Cr	-	-	-	no	-	-	-	-	-	-
Li	-	-	-	-	no	-	-	-	-	-
Cu	-	-	yes							

A. H. Rose¹ has demonstrated that the binary and more complex aluminum alloys with Fe, Mn, Cr and Ni, reduction of the surface tension is observed on addition of Ni which is known to promote to aluminum. For example, Cu, Cd, Li and Zn are such elements.

It is desirable that the introduced elements not only facilitate nucleation of the crystals but also retard their growth. The latter can be observed if the introduced elements are soluble in the crystallizing phases. Some published data on the solubility of elements in intermetallic compounds are presented in the table.

JKS 55-6/2
2 May 72

MAL'NOVSKIY,

R.

Дж/5 55/86
11/12/72

UDC 669.716.521.743.55

METHOD OF PRODUCING COMPOSITE ALUMINUM ALLOYS WITH AN EQUIAXIAL STRUCTURE

[article by R. N. Mal'novskiy and V. I. Tsvetanov, All-Union Institute of Light Alloys, ~~of the Ministry of Defense of the USSR~~, Investigative Bureau, Tsvetnaya Metallurgiya, Russian, No 6, 1971, signed to press 16 June 1971, pp 139-141]

The increase in the need for light heat-resistant materials is forcing investigators to improve the already existing alloys and to develop new composites as well as new methods for casting such alloys. Taking into account that the crystals of aluminum or refractory metals (Nb, Cr, Fe, Zr, etc.) are distinguished by their high degree of hardness and heat resistance, it is feasible to strengthen the aluminum matrix with such phases. However it is not enough to merely produce an aluminum alloy with an elevated amount of these intermetallic crystals, it is necessary that they be very dispersed and uniformly distributed in the structure.

For the purpose of reducing the size of the crystal structure of such alloys we have developed a method of two-stage crystallization [1]. The essence of the method involves the separation of the crystallization into two stages. The first stage takes place in a special device, immediately in front of the crystallizer, at a high rate of cooling. Cooling of the thin jets or drops of the melt takes place below the temperature of the liquidus with the formation of primary intermetallic crystals. The as-yet insufficiently obtained liquid metallic suspension is fed into the crystallizer, where the second stage of crystallization is accomplished, i.e., the ingot is shaped and finally hardened. The high cooling rate of the alloy at the first stage assures reduction in size of the crystal structure of the ingot. The devices for chilling the metallic flow in front of the crystallizer were also suggested previously in [2-4].

USSR

UDC 669.71.018.9

MALINOVSKIY, R. R., TARARYSHKIN, V. I.

"New Direction in Refinement of the Crystal Structure of Ingots"

Metalloved. splavov lezhikh met. -- V sb. (Physical Metallurgy of Alloys of Light Metals -- collection of works), Moscow, Nauka Press, 1970, pp 112-118 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G200)

Translation: A method of two-stage crystallization of alloys based on aluminum having a temperature crystallization interval predominately with primarily crystallizing intermetallic compounds is proposed, theoretically founded, and experimentally confirmed. As a result of applying this method making use of a water-cooling trough (cone) or atomizing the melt into drops, it is possible to refine the crystal structure of the ingots appreciably. There are 7 illustrations and a 10-entry bibliography.

1/1

- 7 -

USSR

UDC 669.71.042.6

MALINOVSKIY, R. R."Method of Refining the Crystal Structure of Ingots"

Obogashcheni metallurgiya polezn. iskopayemykh -- V sb. (Beneficiation and Metallurgy of Minerals -- collection of works), Irkutsk, 1970, pp 68-69 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G180)

Translation: Refinement of the crystal structure of ingots is achieved by increasing the cooling and crystallization rates during hardening of ingots of Al-based alloys. A method of two-stage crystallization of the alloys is proposed. Cooling of the metal stream ahead of the crystallizer to a liquid-solid state is carried out in the first stage. As a result of decreasing the cross section of the stream or drops, the cooling rate is increased sharply, and very fine particles of the primary phase are obtained as a result. The necessary ingot is formed from a metal suspension in the crystallizer. When cooling the stream in a simple metal trough with a flat water-cooled bottom ~200 mm long, cooling rates up to 500 deg/sec were achieved, and significant refinement of the grains of the Al-alloy ingot structure was insured. This increased the mechanical properties of the molded bars (the bars of alloy type AK-1 had an increase in σ from 8-9 to 12-13 kg/mm² at 350°). It was

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USSR

MALINOVSKIY, R. R., Obogashch. i metallurgiya polezn. iskopayemykh, 1970,
pp 68-69

proposed that atomization of the metal stream by gas ahead of the crystallizer
be used to obtain fine grains of the alloy structure with high alloying with
refractory methods.

2/2

- 3 -

USSR

UDC 669.716:621.745.55

MALINOVSKIY, R. R., and TARARYSHKIN, V. I.

"A New Trend in the Comminution of the Crystalline Structure of Ingots"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970,
pp 112-119, resume

Translation: A method of two-stage crystallization of alloys having a temperature interval of crystallization, particularly with initially crystallizing intermetallic compounds, is suggested, theoretically substantiated, and experimentally verified. Thanks to the use of this method by means of a water-cooling pan (cone) or atomization of the melt to drops, the crystalline structure of ingots can be comminuted considerably. Seven figures, ten bibliographic references.

1/1

- 66 -

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--LINING OF THE COMBUSTION CHAMBER OF A HIGH PRESSURE STEAM BOILER

-U-

AUTHOR--(04)-KARKLIT, A.K., KRASOTKINA, N.I., PILDISH, V.G., MALINOVSKIY,
S.V.

COUNTRY OF INFO--USSR

SOURCE--OGNEUPORY 1970, 35(2), 18-23

DATE PUBLISHED-----70

NY

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--STEAM BOILER, SILICON CARBIDE, REFRACTORY MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1707

STEP NO--UR/0131/70/035/002/0018/0032

CIRC ACCESSION NO--AP0118685

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118685
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 2 LAYERS LINING OF THE
COMBUSTION CHAMBER OF A HIGH PRESSURE STEAM BOILER ABLE TO WITHSTAND
RAPID TEMP. CHANGES OF 85-100DEGREES-MIN WAS BASED ON SIC NITRIDE BONDED
BACK FILLEDWITH GROG. THIS SYSTEM OF A SIC TOP LAYER AND A TIGHTLY
PACKED FILL HAS LITTLE VOL. CHANGE WITH TEMP. AND GOOD THERMAL COND.
PRODUCING A LINING THAT HAS IMPROVED LIFE. FACILITY: VSES.
INST. OGNEUPOR., LENINGRAD, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CRYSTAL STRUCTURE OF ANHYDROUS COPPER PROPIONATE -U-

AUTHOR--(02)-SIMONOV, YU.A., MALINOVSKIY, T.I.

M

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 370-1

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, ORGANOCOPPER COMPOUND, COPPER COMPLEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1409

STEP NO--UR/0070/70/015/002/0370/0371

CIRC ACCESSION NO--AP0116856

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116856
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANHYD. CU(MECH SUB2 COO) SUB2 FORMS DARK GREEN PRISMS WITH CLEAVAGE PLANES ALONG THE (001) AND (010) PLANES AND LATTICE PARAMETERS ALPHA 5.19, B 8.58, AND C 9.69 PLUS OR MINUS 0.05 ANGSTROM, ALPHA 87DEGREES 50 PRIME, BETA 90DEGREES, GAMMA 75DEGREES. 50 PRIME PLUS OR MINUS 30 PRIME; EQUALS 1.71, THE UNIT CELL CONTAINS 2 MOLES OF CU(MECH SUB2 NEGATIVE COO) SUB2, AND 4 O ATOMS OF 4 CARBOXYL GROUPS AROUND CU. THE SLIGHTLY DISTORTED SQUARE DEVIATES BY DELTA SUB01 EQUALS MINUS 0.007, DELTA SUB2 EQUALS MINUS 0.00 SUB3, DELTA SUB03 EQUALS 0.00 SUB3, AND DELTA SUB04 EQUALS 0.000 ANGSTROM FROM THE PLANE 3.68X MINUS 3.99Y PLUS 4.45Z PLUS 5.03 EQUALS 0. THE 5TH NEIGHBOR OF CU, O(3), COMPLETES THE COORDINATION OF CU BONDED WITH THE BASAL CENTER OF INVERSION AT POINTS ONE HALF, 1, 0, AND FORMS WITH THE 1ST CU ATOM A 2,NUCLEI COMPLEX. FACILITY: INST. PRIKL. FIZ., KISHINEV, USSR.

UNCLASSIFIED

Acc. Nr.

AT0050275

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code

ZIR 00287

104916f Structure of the complex anion $[\text{Co}(\text{SO}_4)_2(\text{NH}_3)_4]^-$.
Ablov, A. V.; Landa, L. I.; Simonov, Yu. A.; Malinovskii,
I. I.; Tovbis, A. B. (Inst. Khim., Kishinev, USSR). DOKL.
Akad. Nauk SSSR 1970, 190(3), 578-81 (Chem. (Russ.)). X-ray
anal. of the dark-brown form of $\text{NH}_4[\text{Co}(\text{SO}_4)_2(\text{NH}_3)_4].3\text{H}_2\text{O}$ indi-
cates that the SO_4 groups are in the cis-position and are bonded
to the Co atom through S. The interat. distances and valence
angles are tabulated.

C. J. Steinberg

REEL/FRAME
19810205

Organophosphorous Compounds

USSR

UDC 541.621'49;546.733'18'86;547.442.2

ABLOV, A. V., BOTCSHANSKIY, M. M., SIMONOV, YU. A., MALINOWSKIY, T. I.,
GOL'DMAN, A. M., and BOLUGA, O. A., Institute of Applied Physics, Academy of
Sciences MSSR, Institute of the Chemistry, Academy of Sciences MSSR, Kishinev

"A New Kind of Stereoisomerism in trans-Dioximines of Cobalt (III) With
Triphenylphosphine and Triphenylstibine"

Moscow, Doklady Akademii Nauk SSSR, Vol 206, No 4, Oct 72, pp 863-865

Abstract: In an earlier publication it was reported that triphenylphosphine,
triphenylarsine, and triphenylstibine can easily replace water in trans-
acidoaquadioximines of cobalt (III) forming compounds $\left[\text{CoK}(\text{DH})_2\text{EP}_3 \right]$

where X = Cl, Br, or I, and E = P, As or Sb. Furthermore, it was shown that
these products occur as mixtures of two modifications. This paper covers
x-ray diffraction studies of such compounds. The experimental results
obtained show that cobalt (III) dioximines exhibit an unique case of stereoi-
somerism. Both modifications are in trans-configuration; in one case two
chelate units DH are located in a plane, in the other the DH chelate
planes are at an angle to each other, the cobalt atom being moved out of the
center of the octahedron.

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MALINOVSKIY, V.K.

JPRS 59030
17 May 1973QUASISTATIONARY CO₂ LASER WITH PULSED EXCITATION

[Article by I. F. Kuznetsov, I. P. Kruglyakov, V. N. Malinovskiy; *Vestn. Tekhnicheskoy Kibernetiki*, No. 5, 1971, signed to press 10 February 1971, pp. 172-173]

Lasers are discussed in the literature [1-5]. A laser model that combines pulsed excitation of molecules in the discharge gap and nonequilibrium discharge of supersonic flow in a vacuum [1, 2] is described in this article.

The experiment is illustrated in Figure 1. The working mixture CO₂-Ar-He (component ratio 3:3:6, respectively), prepared in chamber 1, flowed through high-speed valve 2 (opening time $5 \cdot 10^{-4}$ sec) into laser nozzle 3 and was accelerated to a velocity of $5 \cdot 10^5$ cm/sec. The irradiation capacity pump, with which free discharge of the flow in the vacuum in $20 \cdot 10^{-3}$ sec was simulated, The stationary flow mode was established $5 \cdot 10^{-3}$ sec after actuation of the valve and a rectangular pulse with a duration up to $2 \cdot 10^{-3}$ sec was admitted to the discharge gap, comprising grid 4. The length of an individual discharge channel in the direction of flow was 2 cm, and the diameter was 0.5 cm. The summary transparency of the grid was 40%.

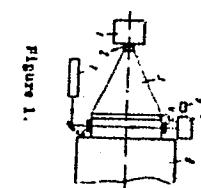


Figure 1.

This model and the one described in [6], using high gas pumping rates to increase discharge power, i.e., the fact that the flight time of gas molecules through the discharge gap for the typical conditions of the described experiments (summary density of the mixture in the discharge area $4 \cdot 10^{17} - 1.5 \cdot 10^{18}$ cm⁻³) is considerably shorter than the characteristic life-time of the level on 1 of CO₂ (τ_0).

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USSR

UDC:62-50.001.5

MALINOVSKIY, V. N., Corresponding Member of Acad. Sci. UkrSSR, EGIPKU, V. M.,
Candidate of Technical Sciences, and POGOSYAN, I. A.

"Problem of Planning Systems for Automation of Experimental Studies"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No. 5, Sep-Oct 70,
pp. 14-18

Abstract: Systems for automation of scientific experiments are complex systems, formalized by methods from queueing theory. These systems are analyzed from this standpoint, considering any actual automation object as a "supplier" of primary information, while the technical devices act as servicing devices. A classification plan is presented for the parts of a system for processing experimental data. This classification plan, in contrast to earlier published plans, considers the specific features of these complex systems. The classification plan is an aid in selecting the type of mathematical system model to be used on the basis of preliminary experimental results. The process of planning of systems for automation of experimental studies is thus divided into individual stages in

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USSR

MALINOVSKIY, V.N., EGIPKO, V.M., POGOSYAN, I.A., Kiev, Mekhanizatsiya i Avtomatzatsiya Upravleniya, No 5, Sep-Oct 70, pp 14-18

which successive determination, clarification, and optimization of the required technical characteristics of the system are performed. A broad range of standard machine algorithms can be developed on the basis of the classification plan presented, allowing automation of all stages in planning.

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- END -

PCN: 1022-0

1/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--THERMO E.M.F. OF INDIUM TELLURIUM MELTS -U-

AUTHOR--(03)-SHEVCHUK, P.P., MALINOVSKY, V.V., VELIMANOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--UKRAIN. KHIM. ZHUR., JAN. 1970, 36, (1), 58-60

DATE PUBLISHED----JAN70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--TELLURIUM ALLOY, METAL MELTING, INDIUM ALLOY, INTERMETALLIC COMPOUND, THERMOELECTROMOTIVE FORCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1999

STEP NO--UR/0073/70/036/001/0058/0060

CIRC ACCESSION NO--AP0118958

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118958

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMO,E.M.F. OF PURE TE AND IN,TE MELTS OF A WIDE RANGE OF COMPOSITIONS (DOWN TO 30 AT. PERCENT TE) WAS MEASURED AT 400-900DEGREES C. MELTS WITH LOW TE CONCENTRATIONS HAD A NEGATIVE THERMO,E.M.F. OF SMALL ABS. VALUE, ALMOST INDEPENDENT OF TEMP. FOR MELTS WITH THE STOICHIOMETRIC COMPOSITION IN SUB2 TE SUB3 THE THERMO,E.M.F. BECAME POSITIVE AND REMAINED SO AS THE TE CONTENT INCREASED FURTHER. THE ABS. THERMO,E.M.F. REACHED A MAX. AT 65 AT. PERCENT TE AND THEN FELL, REACHING A MIN. FOR PURE TE.

UNCLASSIFIED

USSR

UDC 669.187.2

MALINOVSKIY, YE. I., IOFFE, I. M., CHERNENKO, V. V., and TROYAN, S. G.,
Ukrainian Scientific Research Institute of Special Steels

"Quality of a Structural Steel Produced Using Silicon-Containing Tailings"

Moscow, Stal', No 9, Sep 73, pp 808-809

Abstract: The authors melted a structural steel type 25KhSNVFA having a sulfur and phosphorus content less than or equal to 0.010 and 0.015%, respectively, in a 60-ton electrofurnace using silicon-containing tailings and partial oxidation of the bath with oxygen. It was found that in the remelting of the alloyed tailings (containing Si, W, etc.) the removal of P and nonmetallic inclusions is hindered without boiling but this shortcoming can be compensated by an argon blow in the ladle (8-10 minutes per consumption of 0.25-0.5 m³/t of steel and a metal temperature of 1590-1610° C prior to the blow). With the use of 50-70% alloyed tailings in the charge, steel type 25KhSNFA, containing less than 0.015% P was produced by this technology. Without the refining argon-gas blow of the required level the purity of the steel, as to nonmetallic inclusions, cannot be achieved. V. I. MORDVINTSEV, I. S. PASYNKOV, V. P. POTAFOVA, and M. I. GRINER Participated in this work. Two tables, six bibliographic references.

USSR

UDC: 612.13.014.45

MALINSKAYA, N. N. and PODGORNAYA, T. G., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"Effect of Frequency and Duration of Vibration on the Peripheral Circulation in Man"

Moscow, Gigiyena Trucha i Professional'nyye Zabolevaniya, No 1, 1971, pp 9-13

Abstract: The effect of 5 and 30 min of vibration at various frequencies (16, 63, 250, and 1,000 hz) and oscillatory velocity levels (111, 117, and 123 db) was studied in 10 apparently healthy men who had previously not been subjected to vibration. The peripheral blood in the exposed right hand was investigated by means of sphygmography and rheovasography. The vascular reaction, which developed in two phases, varied with the frequency, intensity, and duration of the vibration. Vibration at the low (16 hz) and medium (63 hz) frequencies increased vascular tone (vasoconstriction) while the higher frequencies (250 and 1,000 hz) decreased it (vasodilatation). A reflex mechanism is considered to be responsible for the two-phase vascular reaction. Stimulation of the afferent fibers of the peripheral nerves results in reflex constriction of the blood vessels followed by dilatation due to inhibition of vasoconstrictor tone of the vessels of the extremity.

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USSR

UDC 617-001.34

DOGLE, N. V., and MALINSKAYA, N. N., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"Social and Hygienic Importance of Vibration Sickness and Ways of Preventing It"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, Jul 70, pp 8-11

Abstract: Vibration sickness is the third most important (18.8%) chronic occupational disease in the USSR. The highest incidence of the disease in 1968 was found in industrial plants of the nonferrous and ferrous metal industry, power and transportation machine building, coal production, and the automobile industry. The incidence of the disease in tractor and agricultural machinery plants was 1/4 that in the nonferrous industry. Almost 50% of those afflicted were temporarily unable to work. In some cases this figure was as high as 70-95%. Vasomotor disturbances are observed in the early stages of the disease and time off is prescribed. The disease remains a great problem from both the public health and economic standpoints. One of the reasons for its high incidence is the widespread use of high-frequency vibration equipment, which is often built in-house and of inferior quality. Physicians, physiologists, hygienists, and occupational pathologists are concentrating on the
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USSR

DOGLE, N. V. and MALINSKAYA, N. N., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, Jul 70, pp 8-11.

development of preventive measures, such as periodic medical check-ups of personnel working with vibration equipment. Engineers and other technical specialists are developing improved vibration equipment.

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172 012 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--KINETICS OF AUTOCATALYTIC DEHYDROCHLORINATION OF POLYVINYL CHLORIDE
-U-

AUTHOR--(03)-MINSKER, K.S., MALINSKAYA, V.P., PANASENKO, A.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(5), 1151-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MATHEMATIC EXPRESSION, CHEMICAL REACTION KINETICS, POLYVINYL CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1249

STEP NO--UR/0459/70/012/005/1151/1154

CIRC ACCESSION NO--AP0134923

UNCLASSIFIED

2/2 .012 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0134923

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION OBEYS THE EQUATION CHI EQUALS KAPPA SUB0-KAPPA[EXP(KAPPAALPHA TAU) MINUS 1], WHERE KAPPA SUB0 AND KAPPA ARE RESP. THE RATE CONSTS. OF THE NONCATALYTIC AND AUTOCATALYTIC REACTIONS, CHI IS THE AMT. OF HCL EVOLVED DURING TIME TAU, AND ALPHA SUB0 IS THE AMT. OF HCL IN THE POLYMER PRIOR TO THE REACTION. KAPPA AT 176DEGREES EQUALS KAPPA SUB0 TIMES 10 PRIME3 (AND DEPENDS ON THE EQUIL., HCL (COMBINED) YIELDS AND IS FORMS AND IS FORMED FROM HCL(G)).
FACILITY: BASHKIR. GOS. UNIV., UFA, USSR.

UNCLASSIFIED

MALINSKIY,

D. M.

STATISTICAL METHODS OF EVALUATING PHYSICAL DEVELOPMENT OF THE POPULATION

[Article by L.M. Polikar'ev, N.N. Taranda, D.M. Malinskiy. Military Medical Academy direct. S.M. Kirov (director — Professor), Moscow, Sovetskoye Zdравоохранение, Russian, No. 2, 1972, submitted 8 September 1971, pp. 12-22]

Physical development is one of the main general indices characterizing the level and shift of physical condition of the population and its different age-sex, ethnic, occupational, and other groups. Regular monitoring of physical development is an important component of the pre-physicalistic direction of Soviet public health. In the USSR a well-organized system has been developed for dynamic medical observation of the physical development of many population groups and especially the young generation. The concern for the physical development of children and young people can be attributed to the fact that it is precisely among them that it is possible to successfully alter the shape and proportions of the body through physical education.

Such work becomes effective provided there is a scientifically substantiated method of assessing the level and dynamics of physical development. Soviet health statistics are constantly improving methods for group and individual evaluation of physical development.

In the present article we discuss the state and prospects of a statistical method for individual evaluation of physical development. Such evaluations are made in the USSR on the basis of specially developed tables of standards which are based on mathematical statistical methods.

The method presently in general use to evaluate individual physical development is the method of regression scales (for the method of correlation). A summary evaluation of individual physical development using this scale is more justified than the previously used index method, sigma rating by the method of R. Martin, and others.

The rating tables used with the regression scale method are made up for a qualitatively homogeneous (according to sex, age, permanent residence, occupation, etc) population group. The chief parameters of physical development

JPRS 55570
29 Mar 72
UIC: 57.51:312.6

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CONTROL AND TESTING OF RADIO EQUIPMENT -U-

AUTHOR--MALINSKIY, V.D.

COUNTRY OF INFO--USSR

SOURCE--KONTROL' I ISPYTANIYA RADIOPARAPPARY, MOSCOW, ENERGIYA, 1970, 336
PP

DATE PUBLISHED-----70

SUBJECT AREAS--METHODS AND EQUIPMENT, NAVIGATION

TOPIC TAGS--COMMUNICATION SYSTEM TEST, RADIO ENGINEERING, ELECTRIC
EQUIPMENT MAINTENANCE, CLIMATIC INFLUENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0014

STEP NO--UR/0000/70/000/000/0001/0336

CIRC ACCESSION NO--AM0133905

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV76

CIRC ACCESSION NO--AM0133905

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS PREFACE 3. CHAPTER I TESTS OF RADIODELCTRONIC EQUIPMENT 5. II CLIMATIC INFLUENCE ON RADIODELCTRONIC EQUIPMENT 87. III CLIMATIC TESTS OF RADIODELCTRONIC EQUIPMENT AND APPLICABLE INSTRUMENTATION 151. IV MECHANICAL INFLUENCE ON RADIODELCTRONIC EQUIPMENT 226. V MECHANICAL TESTS OF RADIODELCTRONIC EQUIPMENT AND APPLICABLE INSTRUMENTATION 243. VI TECHNICAL CONTROL OF RADIODELCTRONIC EQUIPMENT 273. APPENDIXES 320. LITERATURE 332. THE BOOK WAS WRITTEN FOR ENGINEERS OF THE RADIODELCTRONIC INDUSTRY, OCCUPIED WITH DEVELOPMENT OF METHODS OF TESTING AND THEIR CONDUCT. IT MAY ALSO BE USEFUL TO SENIOR STUDENTS OF RADIOTECHNICAL FACULTIES.

UNCLASSIFIED

USSR

UDC: 621.396.6.019.3

MALINSKIY, V. D.

M
"Inspection and Testing of Radio Equipment"

Kontrol' i ispytaniya radioapparatury (cf. English above), Moscow, "Energiya", 1970,
336 pp, ill. 1 r. 18 k. (from RZh-Radiotekhnika, No 6, Jun 70, Abstract No 6V283 K)

Translation: The book deals with tests of radio electronic equipment for the effect of climatic and mechanical factors. Modern methods of testing and technical inspection are given together with a brief description of their characteristics. A procedure for compiling programs for testing and technical inspection is considered. Methods are given of testing for various climatic and mechanical effects, and the test equipment which is used is described. The book is intended for engineers in the radio electronics industry, and those engaged in developing and carrying out testing methods. It may also be useful to students in advanced courses in radio engineering departments. Author's abstract.

1/1

USSR

MALINSKIY, VLADIMIR DAVIDOVICH

"Quality Control and Testing of Radio Electronic Equipment" (Kontrol' i Ispytaniya Radioapparatury)

Moscow, "Energiya," 17,000 copies, 336 pages.

Abstract: The book examines radio electronic equipment tests for the effects of climatic and mechanical factors. A classification and the brief characteristics of modern methods of testing and quality control are presented. Methods for compiling programs of testing and of quality control are presented along with a description of the testing equipment used.

The book is intended for engineers of radio electronic industry involved with the development of the methods of testing and their execution. It may be also useful for students of advanced courses of radio engineer faculties.

The book has 56 citations. The chapter headings are as follows:

Chapter 1. General problems of testing radio electronic equipment	5
Chapter 2. Climatic effects on radio electronic equipment	67

1/2

USSR

MALINSKIY, VLADIMIR DAVIDOVICH, Energiya, 17,000 copies, 336 pages

Chapter 3.	The climatic tests of radio electronic equipment and the testing equipment used.	151
Chapter 4.	Mechanical effects on radio electronic equipment	226
Chapter 5.	Mechanical tests for radio electronic equipment and testing equipment used	243
Chapter 6.	Technical control of radio electronic equipment	278

2/2

1/2 038 UNCLASSIFIED PROCESSING DATE--23 OCT 70
TITLE--RHEOLOGICAL PROPERTIES OF MELTS OF PLASTICIZED POLYVINYL CHLORIDE
FILLED WITH AEROSIL -U-
AUTHOR-(03)-GUZEYEV, V.V., RAFIKOV, M.N., MALINSKIY, YU.M.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (3), 25-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYMER RHEOLOGY, POLYVINYL CHLORIDE, FILLER, SHEAR STRESS,
VISCOSITY FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY KEEL/FRAME--1997/0657

STEP NO--UR/0191/70/000/003/0025/0027

CIRC ACCESSION NO--AP0119565

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119565

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVE VISCOSITY (N) OF PLASTICIZED POLY(VINYL CHLORIDE) (I) MELTS SHARPLY INCREASED WITH INCREASED AEROSIL (II) CONTENT, DUE TO THE FORMATION OF AN ADSORBED I LAYER AROUND THE II PARTICLES. THE THICKNESS OF THE ADSORBED LAYER IS INVERSELY PROPORTIONAL TO THE SHEAR STRESS AND SHEAR RATE. A DECREASE IN THE THICKNESS OF THE ADSORBED I LAYER CAUSED AN INCREASE IN THE APPARENT ACTIVATION ENERGY OF VISCOUS FLOW.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SELF HEALING OF CRACKS IN POLYMERS. I. EFFECT OF TEMPERATURE AND
CROSSLINKS ON THE SELF HEALING OF CRACKS IN POLY(VINYL ACETATE)-U-
AUTHOR-(04)-MALINSKIY, YU.M., PROKOPENKO, V.V., IVANOVA, N.A., KARGIN,
V.A.
COUNTRY OF INFO--USSR
SOURCE--MEKH. POLIM. 1970, 6(2), 271-5
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYVINYL ACETATE, THERMAL EFFECT, POLYMER CROSSLINKING,
TRANSITION TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0914

STEP NO--UR/0374/T0/005/002/0271/0275

CIRC ACCESSION NO--APO134643

UNCLASSIFIED

2/2 019

CIRC ACCESSION NO--AP0134643

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNSTRESSED POLY(VINYL ACETATE) (I) UNDERWENT RAPID SELF HEALING AT THE APEX OF THE CRACKS AT TEMPS. CLOSE TO THE GLASS TRANSITION TEMP. AND FLOW POINT (T_g SUB1). THE EFFECT OF I CROSSLINKING ON THE "REST" COEFF. (BETA) SUGGESTED THAT THE RAPID INCREASE IN BETA AND T_g SUB1 WAS DUE TO ENHANCED DIFFUSION AND RELAXATION. CROSSLINKING OF I LOWERED BETA AND THE TEMP. AT WHICH MAX. SELF HEALING OCCURRED. THE HIGHLY ELASTIC AND PLASTIC MECHANISMS OF SELF HEALING WERE DISCUSSED. INST. IM. KARPOVA, MOSCOW, USSR.

FACILITY: NAUCH.-ISSLED. FIZ-Khim.

UNCLASSIFIED

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002201910019-6

FILE--UNCLASSIFIED

PROCESSING DATE--02 OCT 70

STRUCTURE, AROMATIC POLYBENZOXAZOLES CONTAINING SEVERAL OXYGEN OR SULFUR ATOMS. AUTHOR--(OS)--YAKUBOVICH, V.S., ASKADSKIY, G.A., SHALYGIN, G.F., MALINSKIY,
YU.M., NIZHELSKIY, A.I.
COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3) 656-62

DATE PUBLISHED-----70

M

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYMER STRUCTURE, POLYCONDENSATION, BENZENE DERIVATIVE, HETEROCYCLIC OXYGEN COMPOUND, HETEROCYCLIC NITROGEN COMPOUND, ORGANIC AZOLE COMPOUND, POLYAMIDE COMPOUND, SULFONE, ELASTICITY, TEVILE STRENGTH, ELONGATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0297

STEP NI--UR/0459/70/012/003/0655/0662

CIRC ACCESSION NO--APO111491

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002201910019-6"

2/2 032

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111491

ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. THE LOW TEMP. POLYCONDENSATION OF 3,3 PRIME, DIHYDROXYBENZIDINE AND OF 4,4 PRIME, DIHYDROXY, 3,3 PRIME, DIAMINODIPHENYL SULFONE WAS CARRIED OUT WITH P,(P,CLCUC SUB6 H SUB4)
SUB2 C SUB6 H SUB4, P,(P,CLCOC SUB6 H SUB4 S) SUB2 C SUB6 H SUB4, AND
(P,CLCOC SUB6 H SUB4 S) SUB2 TO GIVE POLYAMIDES (II). SUBSEQUENT
DEHYDRATION OF I GAVE POLYBENZOXAZOLES (II, WHERE R IS DERIVED FROM THE
DIACID CHLORIDE AND R PRIME1 IS DERIVED FROM THE DIAMINE). THE PRESENCE
OF O, S, OR SO SUB2 BRIDGES IN II INCREASES THE TEMP. RANGE IN WHICH II
RETAIN THEIR ELASTICITY, INCREASES THEIR TENSILE STRENGTH AT BREAK AND
ELONGATION AT BREAK.

UNCLASSIFIED

1/2 035

UNCLASSIFIED

PROCESSING DATE--11DEC70
-U-

TITLE--INVESTIGATION OF COSMIC RAY INDUCED TRACKS IN METEORITIC MINERALS
AUTHOR--(CS)--KASHKAROV, L.L., GENAEVA, L.I., MALISHEV, V.V., SATARUVA,
L.R., LAVRUKHINA, A.K.

CCOUNTRY OF INFO--USSR, HUNGARY

SOURCE--INTERNATIONAL CONFERENCE ON COSMIC RAYS, 1969, BUDAPEST, HUNGARY,
AUGUST 25-SEPTEMBER 4, 1969, PROCEEDINGS. VOLUME I ORIGIN AND GALACTIC
DATE PUBLISHED-----7C

M
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, ASTRONOMY,ASTROPHYSICS,
ATMOSPHERIC SCIENCES
TOPIC TAGS--METEORITE, MINERAL, COSMIC RAY, NUCLEUS, PROTON, TRACK
ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----F070/605061/803 STEP NO--HU/2506/T0/029/000/0449/0452

CIRC ACCESSION NO--AT0144425

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--11DEC70
CIRC ACCESSION NO--AT0144425

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO BASIC COSMIC RAY TRACK SOURCES ARE CONSIDERED: HEAVY PRIMARIES (Z GREATER THAN 22) AND SECONDARY SPALLATION AND FISSION PRODUCTS BY HIGH ENERGY PROTON INTERACTIONS IN METEORITIC CONSTITUENTS. WE PRESENT HERE EXPERIMENTAL DATA ON CALIBRATION OF TRACK LENGTHS IN METEORITIC SILICATE MINERALS. THE INVESTIGATED MINERALS WERE IRRADIATED IN THE HEAVY ION AND HIGH ENERGY PROTON ACCELERATORS IN DUBNA. FINALLY WE REPORT THE RESULTS OF MEASURING FOSSIL TRACK DENSITIES AND LENGTH DISTRIBUTION IN OLIVINE CRYSTALS SAMPLED FROM SEVERAL REGIONS OF THE PALLASITE LLIMAES. THE RELATION VH-VH COSMIC RAY NUCLEI APPROXIMATELY 2 TIMES 0.0001 WAS OBTAINED.

FACILITY: AKADEMIYA NAUK SSSR, INSTITUT GEOKHIMII I ANALITICHESKOI KHIMII, MOSCOW, USSR.

UNCLASSIFIED

USSR

KONOPELKOV, K. G., MALISHEVSKAYA, N. I.

"Changes in Carbohydrate Metabolism and Enzyme Activity in the Mouse Brain as a Result of Exposure to Ionizing Radiation"

Redkollegiya Zh. "Izv. AN Kirg. SSR" (Editorial Board of the journal "Bulletin of the Kirghiz SSR"), Frunze, 1973, 15 pp, 42 refs. (Manuscript received at VINITI (All-Union Institute for Scientific and Technical Information) 30 May, 1973, accession No 6201-73 (from Referativnyy Zhurnal, 30F, Biologicheskaya Khimiya, No 18, 25 September 1973, Abstract No 18F1135 Dep.)

Translation: In the development of radiation sickness in experimental animals, at different times after gamma irradiation (^{60}Co) it was established that the phase nature of changes in the brain glycogen content depended on the activity of the glycogen-forming enzyme system. The phosphorylase and the gamma- and alpha-amylase activities depended on the time after irradiation and were also phasic in nature.

1/1

CSO: 1841-W

- END -

- 58 -

USSR

UDC 542.91:547.833.547.752:547.94

AKHREM, A. A., MOISEYENKOV, A. M., KRIVORUCHKO, V. A., CHERNOV, YU. G., and
~~MALISHEVSKII, V. S.~~, Institute of Organic Chemistry Imeni N. D. Zelinskii
Acad. Sc. USSR, and Institute of Physical Organic Chemistry Acad. Sc. USSR

"Synthesis of Benzo [a]-and Indolo[a]quinolizines: a new Approach to the Total
Synthesis of Some Isoquinoline and Indole Alkaloids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 72, p 2376

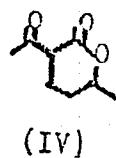
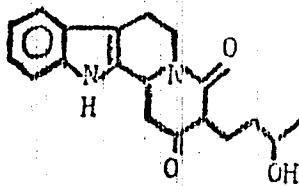
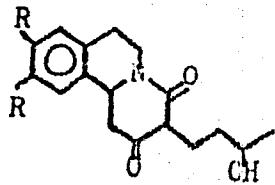
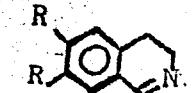
Abstract: Isomethines (I,II) react with acetyl- δ -lactone (IV) to yield a series of lactams (V-VII) which can be converted to corresponding pyranolactams (VIII-X), and dehydrated to pyridones (XI-XIII). Compound (V) was converted in 5 steps to tetrahydroprotoberberine (XIII).

1/3

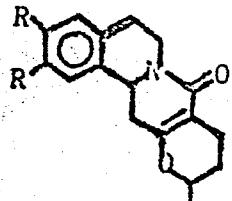
USSR

AKHREM, A. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 72, p 2376

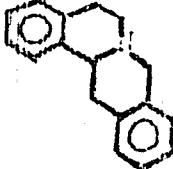
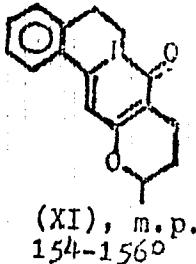
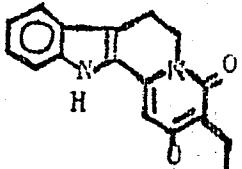
(1)



(VII) $\cdot MeOH$
 m.p. 196-198°



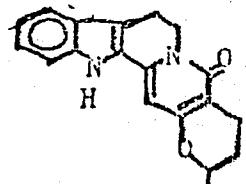
(IX) $R=OMe$, m.p. 143-144.5°
 2/3



" 7 "

USSR

• AKHREM, A. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 72, p 2376



(XII), m.p. 341-344°

(1)

3/3

016 UNCLASSIFIED
TITLE--CERTAIN GLOBAL ESTIMATIONS OF CHAIN SYSTEMS. II -U-
PROCESSING DATE--04DEC70

AUTHOR--MALISHEVSKIY, A.V.

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEKHANIKA, 1970, NR 5, PP 106-119
DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--MARKOV PROCESS, MATHEMATIC MODEL, ECONOMIC ANALYSIS,
RELIABILITY THEORY, CONTROL THEORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1011

STEP NO--UR/0103/10/000/005/0106/0119

CIRC ACCESSION NO--AP0115032

UNCLASSIFIED

2/21/016

CIRC ACCESSION NO--AP0115032

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE AGGREGATED CHARACTERISTICS OF
THE SYSTEMS POSSESSING A SPECIFIC CHAIN STRUCTURE ARE CONSIDERED. IN P.
IT IS SHOWN THAT THE PROBLEMS CONNECTED WITH CERTAIN MODELS IN
MATHEMATICAL ECONOMICS, IN THE THEORY OF THE RELIABILITY OF FINITE
AUTOMATA AND IN THE THEORY OF EXPERIMENTS WITH AUTOMATA LEAD TO THE
INVESTIGATION OF SUCH SYSTEMS. PART II IS DEVOTED TO THE DESIGN OF
CERTAIN ESTIMATIONS FOR THE GLOBAL INDICES OF CHAIN SYSTEMS OF THE TYPE
CONSIDERED AND TO THE APPLICATION OF THE ESTIMATIONS TO THE PROBLEMS
MENTIONED ABOVE.

UNCLASSIFIED

1/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE—ESTIMATIONS OF RELIABILITY ON NON AUTONOMOUS FINITE AUTOMATA -U-

AUTHOR—MALISHEVSKIY, A.V.

COUNTRY OF INFO—USSR

SOURCE—AVTOMATIKA I TELEMEKHANIKA, 1970, NR 6, PP 93-102

DATE PUBLISHED—70

SUBJECT AREAS—MATHEMATICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR,
METHODS AND EQUIPMENT

TOPIC TAGS—AUTOMATIC CONTROL RELIABILITY, PROBABILITY, MATHEMATIC MODEL,
FINITE AUTOMATION

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

PROXY REEL/FRAME—2000/1014

STEP NO—UR/0103/70/000/006/0093/0102

CIRC ACCESSION NO—AP0124673

UNCLASSIFIED

2/2 012

CIRC ACCESSION NO--AP0124673

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE IS INTRODUCED A PROBABILISTIC MODEL FOR THE INVESTIGATION OF THE RELIABILITY OF THE FUNCTIONING OF A FINITE AUTOMATION IN AN ESSENTIALLY NON AUTONOMOUS CONDITION. THERE ARE DETERMINED THE ESTIMATIONS OF THE INDICES OF THE AUTOMATION RELIABILITY IN THE ABSENCE OF A PRIORI INFORMATION CONCERNING THE COMING INPUT SYMBOLS. THERE ARE DESCRIBED GENERALIZED, AUTONOMOUS CONDITIONS UNDER WHICH THE RELIABILITY WORST CONDITIONS OF THE AUTOMATION FUNCTIONING ARE DESCRIBED.

UNCLASSIFIED

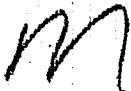
1/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--CONCERNING CONCEPT OF STATE OF DYNAMIC SYSTEM -U-

AUTHOR--MALISHEVSKIY, A.V.



COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEKHANIKA, 1970, NR 3, PP 102-106

DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--DYNAMIC SYSTEM, EQUATION OF STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1470

STEP NO--UR/0103/70/000/003/0102/0106

CIRC ACCESSION NO--AP0106226

UNCLASSIFIED

2/2 016

CIRC ACCESSION NO--AP0106226

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THERE IS PRESENTED AN EXAMPLE OF A SIMPLE PROBLEM IN WHICH THE INTRODUCTION OF THE CONCEPT OF THE STATE OF A SYSTEM ON THE INTUITIVE BASIS MAY LEAD TO THE NON APPLICABILITY OF BELLMAN'S PRINCIPLE OF OPTIMALITY.

UNCLASSIFIED

USSR

UDC 632.95

FEL'DMAN, I. N., MALISHKEVICH, Yu. Ya., FILIMONOV, B. F., and GEYD, Yu. P.

"An Information-Search System for the Technology of Pesticides"

V. sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- Collection of Works), No 3, Moscow, 1973, pp 155-159 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N502)

Translation: The principles underlying the preparation of punch cards for pesticides are described. The cards contain information on the classes of chemical compounds, process flow diagram, preparatory forms, toxicology, effectiveness, residues, manufacturing companies, prices on the world market.

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- 48 -

KRIVOV, N.A., HALISOVA, Ye.V., MEL'CHENKO, E.N.

ABC 6913/5 592

"Study of the Behavior of Gold in Gallium Arsenide"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 817-821

Abstract: This article discusses the method of measuring the temperature dependence of the photoconductivity of gallium arsenide doped with gold when growing from a melt to determine the shallow acceptor level $E_A + 0.04$ electron volts which is the hole capture level and is related to the presence of gold in the given material. On the basis of a study of the temperature dependence of the Hall effect in samples doped with copper and gold, the proposition is stated that the given acceptor level arises from the interaction of copper and gold.

The temperature dependencies of the magnitude of the photosignal of gallium arsenide doped with gold and not doped with gold are presented in graphical form for two light intensities J_1 and J_2 ($J_1 > J_2$). On the basis of analysis of the experimental curves, the energy spectrum and type of deficiency levels are determined in the initial gallium arsenide samples and those doped with gold. The activation energy and ratio of the capture cross sections for the levels in the initial gallium arsenide and the doped gallium arsenide are presented in tabular form. The characteristics of samples doped with copper and gold are compared in a table and figure.

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- 63 -

USSR

KRIVOV, M.A., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970,
pp 817-821

It is concluded that the introduction of gold into the samples of gallium arsenide leads to the occurrence of the $E_V + 0.04$ electron volt level which is observed in doped samples if the 0.02 electron volt level is present in the initial crystals. 2. The given level is the hole capture level in gallium arsenide. 3. Investigation of samples doped with copper and gold suggests that the $E_V + 0.04$ electron volt level is formed as a result of interaction of gold and defects arising from the presence of copper. 4. The presence of gold complicates the formation of the thermal acceptors in gallium arsenide.

2/2

USSR

UDC 519.24

MALITSKIY, A. A., MATS, A. D., and RASKIN, L. G. (Khai'kov)

"On Selection of Measurements Times in a Problem of Parameters Evaluation"

Novosibirsk, Avtometriya No 3, May-Jun 72, pp 36-41

Abstract: The problem of evaluating the a_0 and a_1 parameters of a signal $s(t) = a_0 + a_1 t + \xi(t)$ measured at times t_1, \dots, t_n is considered assuming that $\xi(t)$ is the measurement error and that measurements taken at different times are independent, while the error is distributed according to normal law $N(\mu, \sigma^2(t))$ where $\sigma^2(t)$ is the known time function. A system of equations is derived the solutions of which determine the optimal distribution of measurement times, under condition that a nonstationary Gauss Interference is superposed additionally on the results of measurements. An exhaustive solution of the problem is obtained for the case of equally accurate measurements. The cases of small and large σ are considered at the exponential variation of interference distribution ($\sigma(t) = \sigma_0 e^{\alpha t}$, $\alpha > 0$).

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USSR

UDC 621.382.2

KLEYNER, E. A., Engineer, MALITSKIY, G. A., Engineer, and MAL'TSEV, Yu. S.,
Engineer

"Use of an Integrated Operational Amplifier in the Elements of Digital
Devices"

Moscow, Pribory i Sistemy Upravleniya, No 6, Jun 71, pp 30-32

Abstract: Soviet integrated DC amplifiers are experimentally studied and practical circuits are considered for the elements of digital measuring instruments which operate on the basis of linear monolithic integrated circuits. The IUT401 is a three-stage solid-state DC amplifier with differential input made by planar-epitaxial techniques on a single semiconductor crystal. The unit is designed for use as an operational amplifier. This integrated circuit contains nine NPN transistors and 12 resistive elements. The unit amplifies the difference between signals applied to the input, one signal being inverted, while the other is not inverted. Two modifications are available: the IUT401A with power supply of ± 6.3 V and voltage gain of 700-1800, and the IUT401B with power supply of ± 12.6 V and voltage gain of 1800-4500. The device can perform the operations of addition, subtraction, inversion, integration, differentiation and scaling, and can also convert,
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USSR

KLEYNER, E. A., et al., Pribory i Sistemy Upravleniyem, No 6, Jun 71, pp 30-32
compare, generate, stabilize and detect linear and nonlinear signals. In addition, the LUT401 can be used as a resonance, shaper or video amplifier over a broad frequency range. Because of the low input impedance of the device (tens of kilohms), an emitter follower is connected to the input. This follower is based on the LKT011 integrated interrupter. Practical null-indicator and integrator circuits are presented. The integrator circuit can also be used as a sawtooth voltage generator for timing a digital measuring instrument for pulse-time conversion. The characteristics of the null-detector and integrator are given.

2/2

- 84 -

Instruments and Measurements

USSR

UDC 621.375.024:621.317.7

KLYEYNER, E. A., MALITSKIY, G. A., MAL'TSYEV, YU. S.

"Measuring Converters for Small Back-Connected Instruments"

Voronezh, Izmeritel'naya Tekhnika, No 4, 1971, pp 66-67

Abstract: The schematics of direct current measurement converters constructed on the basis of Soviet linear integrated circuits of the LUT401 (operation amplifier) and 1KT011 (integral interruptors) are investigated. These devices are designed to be built into the analog and digital back-connected measuring instruments. The results of experimental studies of the converters are presented and data are tabulated which permit estimation of the effectiveness of applying them. It is found that on the basis of the developed converters it is possible to create back-connected instruments of both the analog and digital type which have a number of advantages: high sensitivity, small size (it is possible to build an analog device 80 x 80 x 50 mm), low intake from the signal source and the power supply, relatively high accuracy basically determined by the accuracy of the instrument connected at the converter output, high reliability, and resistance to mechanical effects determined by the properties of the output instruments.

1/1

USSR

UDC 621.316.(001.1+004.15)

KHOLMSKIY, V. G., ZORIN, V. V., MALIY, N. O.

"Optimization of the Maintenance Schemes and Voltage Conditions in Municipal Networks with the Aid of a Computer"

V sb. Tekhn. progress v elektrosnabzh. gorodov (Technical Progress in Electric Power Supply of the Cities -- collection of works), Leningrad, Energiya Press, 1970, pp 97-101 (from RZh-Elekrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Ye 275)

Translation: The characteristics of the EPOS-1 and EPOS-2 programs for the Ural-2 digital computer for choosing optimal breakdown points are presented. The minimal power loss during the greatest loads of the network is taken as the purpose function in the EPOS-1 program. For optimization, restrictions on the allowable current and fixing of certain sections by reliability conditions are considered. In the EPOS-2 program, the load charts of the consumers are considered for optimization, and the minimum power loss for the defined period is taken as the purpose function. Optimization of the network is realized considering the voltage conditions; the optimal voltage regulation law in the power supply systems is selected, and an efficient arrangement of the distribution transformer branches is found. [Kiev Polytechnical Institute]

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002201910019-6

TITLE--REACTION OF OLEFIN ALPHA OXIDES WITH BETA HYDROXYALKYL SULFIDES -U-
UNCLASSIFIED
PROCESSING DATE--13NOV70

AUTHOR--MALIYEVSKIY, A.D.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(4), 884-7
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PROPYLENE OXIDE, HYDROXYL RADICAL, SULFIDE, ETHYLENE OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

POLYMER REEL/FRAME--3001/0043

CIRC ACCESSION NO--AT0125878

STEP NO--UR/0020/70/180/004/0384/0837

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002201910019-6"

2/2 010
CIRC ACCESSION NO--AT0125878 UNCLASSIFIED PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF PROPYLENE OXIDE WITH
(HOCH₂CH₂CH₂)_n AT 75DEGREES AND 15 ATM. UNDER AR ATM. GAVE
ETHYLENE OXIDE (I), HOCH₂CH₂CH₂CH₂CH₂OH, AND S(CH₂CH₂)_n
CH₂OH (II). ALL WERE FORMED IN REVERSIBLE REACTIONS. REACTION OF I
WITH S(CH₂CH₂CH₂CH₂CH₂OH)_n ALSO IN A REVERSIBLE
REACTION. FACILITY: INST. KHM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

>

USSR

Luminescence

UDC 661.143.620.179.05(088.8)

MALKES, L. YA., OL'GINSKIY, A. G., KRASOVITSKIY, B. M., MCCHEDLOV-PETROSYAN,
O. P., STAROSEL'SKIY, A. A., and MEL'NICHENKO, P. A.

"A Luminescent Paste for Flaw Detection on Porous Materials"

USSR Author's Certificate No 329191, filed 24 Jul 70, published 20 Mar 72
(from RZh-Khimika, No 22, Nov 72, Abstract No 22L152P)

Translation: A luminescent paste for flaw detection on porous materials has been developed which reveals flaws over a wide range of dimensions. Example. Preparation of the luminescent past, and technique for using it; 0.075 g 1,8-naphthylene-1',2'-benzimidazole is dissolved with heating to 80°C in 100 g of mineral oil, the solution is cooled and thoroughly mixed in a mortar with 100 g of MgO. The resultant paste is applied to the surface of the material (refractories, porous glass, artificial stone) and thoroughly rubbed in. The excess is removed and the material is observed in ultraviolet light; glowing defects are clearly visible on the surface. When detecting flaws in concrete and ceramics, the materials to be tested are soaked in water before application of the paste; this prevents penetration of the luminescent paste into the fine pores (less than one micron) inherent in the nature of the material, and as a consequence prevents fluorescence of the 1/2

USSR

MALKES, L. YA., et al., USSR Author's Certificate No 329191, filed 24 Jul
70, published 20 Mar 72

entire surface under ultraviolet light which would make it impossible to pick out the flaws against the overall glow of the background. MgO adsorbs the luminescent oil, which then gradually flows into the defects, enables thorough washing of the luminescent paste from the surface of large defects (bigger than 1000 microns). The proposed paste can be used for quality control of raw material and finished goods on various stages of the technological process and in use, and does not require complicated special equipment. The composition of the proposed paste (in wt.-%): 1,8-naphthylene-
-1',2'-benzimidazole 0.04, mineral oil 49.98, mercuric oxide 49.98. N. Sh.

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- 32 -

1/3 042

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PROCESSING DATE--20NOV70
FROM KOSMOS 149

TITLE--SPATIAL STRUCTURE OF THE EARTH'S BRIGHTNESS FIELD FROM KOSMOS 149
SATELLITE MEASUREMENTS -U-

AUTHOR--(03)-ISTOMINA, L.G., MALKOVICH, M.S., SYACHINOV, V.I.

COUNTRY OF INFO--USSR

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SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA,
VOL VI, NO 5, 1970, PP 466-476
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SUBJECT AREAS--ATMOSPHERIC SCIENCES, MATHEMATICAL SCIENCES, SPACE
TECHNOLOGY

TOPIC TAGS--ARTIFICIAL EARTH SATELLITE, OPTIC BRIGHTNESS, EARTH PLANET,
AUTOCORRELATION FUNCTION, EIGENVECTOR, CLOUD COVER, METEOROLOGY,
PARAMETER, MEASUREMENT/(U)COSMOS 149 SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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PROCESSING DATE--20NOV70

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CIRC ACCESSION NO--APO132717
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER GIVES SOME RESULTS OF A STUDY OF THE SPATIAL STRUCTURE OF THE EARTH'S BRIGHTNESS FIELD ON THE BASIS OF MEASUREMENTS OF REFLECTED SOLAR RADIATION MADE FROM THE "KOSMOS-149" ARTIFICIAL EARTH SATELLITE. OBSERVATIONS WERE MADE WITH SCANNING TELEPHOTOMETERS IN THE SPECTRAL INTERVAL 0.74 NLCRON. IT WAS FOUND THAT IN EVALUATING THE DEGREE OF HOMOGENEITY AND ISOTROPY OF TWO DIMENSIONAL RANDOM FUNCTIONS IT IS NECESSARY TO FORMULATE A SYSTEM OF EMPIRICAL ORTHOGONAL VECTORS OF AUTOCORRELATION MATRICES OBTAINED FROM DISCRETE CROSS SECTIONS OF THE RANDOM FIELD IN SELECTED DIRECTIONS (FOR EXAMPLE, MUTUALLY PERPENDICULAR). IN THE CASE OF FIELD HOMOGENEITY THE FIRST EIGENVECTORS ARE CLOSE TO TRIGONOMETRIC FUNCTIONS AND THEIR FORM IS NOT DEPENDENT ON THE DIRECTIONS OF THE CROSS SECTION, BUT THE EIGENVALUES OF THE CORRELATION MATRICES FROM A HARMONIC SPECTRUM. IN THE CASE OF AN APPRECIABLE FIELD INHOMOGENEITY, WHEN IT IS IMPOSSIBLE TO USE THE CHARACTERISTICS OF HOMOGENEOUS RANDOM FUNCTIONS IN THE ANALYSIS, THE EIGENVALUES CAN BE REGARDED AS A GENERALIZATION OF SPECTRAL DENSITY AND EIGENVECTORS OF THE CORRESPONDING CORRELATION MATRICES CAN BE USED AS A CANONICAL SYSTEM. THE METHOD DESCRIBED IN THE STUDY MAKES IT POSSIBLE TO DETERMINE THE VALUE OF THE NATURAL SCALE OF RANDOM BRIGHTNESS FIELDS WHICH CAN BE CONSIDERED HOMOGENEOUS IN THIS SENSE (IN THIS CASE THIS VALUE IS 500 KM). WITH A DECREASE IN THE SCALE THE HOMOGENEITY PROPERTY IS EVIDENTLY NOT RETAINED UP TO THE SCALES OF SEVERAL KILOMETERS.

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CIRC ACCESSION NO--APO132717
ABSTRACT/EXTRACT--SINCE VARIATIONS OF THE EARTH'S BRIGHTNESS ARE RELATED
FOR THE MOST PART TO THE CLOUD COVER DISTRIBUTION AND THE LATTER IS
RELATED TO THE SPATIAL FIELDS OF TEMPERATURE AND HUMIDITY IT IS
OBVIOUSLY NECESSARY TO CONDUCT STATISTICAL PROCESSING OF THE FIELDS OF
METEOROLOGICAL PARAMETERS AT DIFFERENT SCALES EMPLOYING THE METHOD
DESCRIBED ABOVE.

FACILITY: INSTITUTE OF ATMOSPHERIC PHYSICS.

UNCLASSIFIED

1/2 AP 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SCANDIUM HYDROXIDE FORMATION REACTION -U-

AUTHOR--(02)-MIRUNOV, N.N., MALKEVICH, N.V.

COUNTRY OF INFO--USSR

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SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SCANDIUM COMPOUND, HYDROXIDE, TERNARY FLUID SYSTEM, NITRATE,
SULFATE, SCANDIUM CHLORIDE, SOLUTION CONCENTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1874

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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115693

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMATION OF SC HYDROXIDE (I) WAS STUDIED BY THE SOLY. METHOD, BY DETN. OF PH AND ELEC. CONC. OF EQUIL. SOLNS., BY POTENTIOMETRIC AND CONDUCTIMETRIC TITRN. AND BY X RAY POWDER DIFFRACTION. THREE SYSTEMS WERE STUDIED: SC(Cl) SUB3-NaOH-H₂O, SC(NO₃)₂ SUB3SUB3-NaOH-H₂O, AND SC₂SO₄(SO₄)₂ SUB3-NaOH-H₂O. O. ANIONS PRESENT IN THE SYSTEMS AFFECTED I FORMATION, IN THE 1ST 2 SYSTEMS I FORMED AT LOWER OH PRIME NEGATIVE-SC PRIME POSITIVE CONCN. RATIOS THAN IN THE LAST SYSTEM. SC(OH)₂1.75(Cl) SUB1.25, SC(OH)₂ NO SUB3, AND SC(OH)₂3.2(SO₄)₂ SUB0.34, SEPDW IN THE SYSTEMS, RESP.

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USSR

UDC 669.28.001.5

GULYAYEV, A. P., MORGUNOVA, N. N., MALKHASIAN, N. M., MOSCOW

"Shock Viscosity and Brittleness Threshold of Molybdenum"

Kiev Problemy prochnosti, No. 8, Aug 71, pp 70-73

Abstract: The characteristics of the breakdown of molybdenum and the effect of geometric factors on this process are studied. It is noted that in addition to internal factors such as composition and structure, the brittleness threshold may also depend on external factors such as the cross section of the sample and the sharpness of a cut, and that there has been insufficient data characterizing the effect of external factors. The object of the study was the alloy TsM-2A (Zr -- 0.1%, Ti -- 0.13%, C -- 0.0037%, and the remainder Mo) in the shape of a bar of diameter 16 mm. The tests were conducted on metal deformed by rolling at 1200°C with a degree of deformation of 70% and recrystallized at an annealing temperature after deformation of 1500°C for 1 hr. Samples of cross section 10 × 10 mm were made from the rod with a cut of depth 2 mm and radii 1.0, 0.5, 0.25 and 0.1 mm. The brittleness threshold as determined on the basis of the shock viscosity for recrystallized molybdenum is higher than

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GULYAYEV, A. P., et al, Problemy prochnosti, No. 8, Aug 71, pp 70-73

deformed molybdenum (400-480 and 100-220°C, respectively). An increase in the sharpness of the cut did not change the temperature for the transition of molybdenum into the brittle state. Breakdowns occur across the sample in deformed molybdenum in the brittle state but in the transition temperature region a portion of the samples began to tear and another portion was bent. The fraction of the bent portion of the sample increased with an increase in temperature. The sharpness of the cut did not effect the relationship of the bent and broken parts of the cross section. The specific work expended on breakdown of wires was determined and it decreased with a drop in temperature and became close to zero at the lower brittleness threshold.

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Luminescence

UDC 661.143.(088.8)

USSR

MALKES, L. YA., KUZ'MINA, N. V., KRASOVITSKIY, B. M., et al.

"Luminescent Liquid for Defectoscopy"

USSR Author's Certificate No 362860, filed 15 Mar 71, published 1 Feb 73 (from RZh-Khimiya, No 21, Nov 73, Abstract No 21 L 162 P)

Translation: In order to lower the toxicity and fire hazard, the luminescent liquid used in luminescent defectoscopy in aviation, in automobile and ship-building industries contains an organic solvent consisting of 95-99% of dicumylmethane and 1-5% of dimethylformamide (their ratio 40:1). The organic luminescent component of this mixture is 1,8-naphthylene-1',2'-benzimidazole. The wetting agent OP-7 is added to impart wetting property. The components are mixed at 85-90° and a yellowish-green transparent liquid is obtained with intensive luminescence under UV light. Example. Luminescent liquid composition (in g): dicumylmethane 970, dimethylformamide 24, wetting agent OP-7 1, 1,8-naphthylene-1',2'-benzimidazole 5; The wetting agent and the organic luminescent component may be replaced by other reagents with similar properties.

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Respiration Physiology

MALKIMAN, I. I.

SP: JPRS S4760
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REACTION OF THE HUMAN BODY DURING BREATHING OF GAS MIXTURES CONTAINING 3-92% CO₂

(Article by I. I. Malkiman, V. N. Bilyakov and E. N. Tsvetkov; *Journal of Physiology*, Moscow, Komicheskaya Poljotekhnika Publishing House, Vol. 5, No. 5, 1971, submitted for publication 20 February 1970, pp 17-22)

A relatively small number of investigations has been devoted to the toxic effect of carbon dioxide on the human body. The literature gives cases of poisoning of human subjects by CO₂ (see, A. M. Tsigoridze; A. M. Natukov; A. M. Raskin and B. B. Mischenko; A. V. Tret'yakov), but none of these studies give any precise data on the CO₂ and O₂ content in the inhaled air and this naturally considerably lowers the value of these observations.

Eulenberg feels that 6 percent is the limiting CO₂ concentration in air whose breathing does not induce considerable functional impairment. V. A. Vigdorchik, citing Tsai, assumes that breathing a mixture containing 5-6 percent CO₂ can cause fatal poisoning. Fary and Zerrik cite data from Leman, who believes that there is a lethally dangerous concentration of 4.0-4.5 percent CO₂ when the exposure is 30 minutes and N. V. Lazarev believes that a lethal outcome is possible when there is a 3 percent CO₂ content in the breathed air, not mentioning the duration of exposure.

A. N. Razin believes that the admissible time for man's exposure in an atmosphere with 2-3 percent CO₂ is limited to 10-20 minutes. However, S. G. Sharov, et al., and Schaefer have under similar conditions noted only moderate impairment in the principal physiological functions even with a more prolonged exposure to CO₂ in these concentrations. V. S. Monkaleiko, on the basis of his own observations, concluded that 2-hour breathing of a gas mixture containing 4 percent CO₂ is entirely tolerable for a healthy man both at rest and when performing light physical work (300 kg·minute). White, et al., and Brown feel that it is admissible to breathe air containing 6.8 percent CO₂ for 10 minutes.

Brown, Madura, Pollock, et al., feel that the breathing of a gas mixture containing 12-15 percent CO₂ can be tolerated by man for only